

CLAIMS

We claim:

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1. A method of inducing, in a human, serum antibodies which protect against infection with *S. typhi*, comprising administering to said human, a composition comprising a molecular conjugate of the *S. typhi* Vi polysaccharide covalently bound through a carboxylic acid dihydrazide linker to *Pseudomonas aeruginosa* recombinant exoprotein A in a pharmaceutically acceptable carrier.

2. The method of claim 1 wherein the *S. typhi* Vi polysaccharide is covalently bound to the rEPA by means of an adipic acid dihydrazide linker.

3. The method of claim 1 or 2 wherein said conjugate molecule is administered at a dose of about 3 micrograms to about 50 micrograms of *S. typhi* Vi polysaccharide.

4. The method of claim 3 wherein said conjugate molecule is administered at a dose of about 25 micrograms of Vi polysaccharide.

5. The method of claim 1 or 2 wherein the antibodies protect the human against infection by *S. typhi*.

6. A composition comprising antibodies which are immunoreactive with *S. typhi* Vi polysaccharide, said antibodies being obtained from a human after administration to said human of a composition comprising a conjugate molecule comprising the *S. typhi* Vi polysaccharide covalently bound through a carboxylic acid dihydrazide linker to *Pseudomonas aeruginosa* recombinant exoprotein A.

7. The composition of claim 6, further comprising antibodies which are immunoreactive with ETA.

8. The composition of claim 6, wherein the composition is chosen from the group consisting of plasma, serum, and gamma globulin fraction.

9. The composition of claim 7, wherein the composition is chosen from the group consisting of plasma, serum, and gamma globulin fraction.

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10. An antibody which is immunoreactive with *S. typhi* Vi polysaccharide which is obtained from a human, after administration to said human of a composition comprising a conjugate molecule comprising the *S. typhi* Vi polysaccharide covalently bound through a carboxylic acid dihydrazide linker to
5 *Pseudomonas aeruginosa* recombinant exoprotein A.

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11. A method of passively immunizing a mammal against *S. typhi*, comprising administering to said mammal an immunologically sufficient amount of a composition according to any one of claims 6-9.

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12. A method for vaccinating a human against *S. typhi* infection, comprising administering to the human an immunizing amount of a composition comprising a molecular conjugate of *S. typhi* Vi polysaccharide covalently bound through a carboxylic acid dihydrazide linker to *Pseudomonas aeruginosa* recombinant exoprotein A in a pharmaceutically acceptable carrier.

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15 13. The method of claim 12 wherein the *S. typhi* Vi polysaccharide is covalently bound to the *Pseudomonas aeruginosa* recombinant exoprotein A by means of an adipic acid dihydrazide linker.

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20 14. A vaccine composition comprising an immunologically effective amount of a molecular conjugate of *S. typhi* Vi polysaccharide covalently bound through a carboxylic acid dihydrazide linker to *Pseudomonas aeruginosa* recombinant exoprotein A, in a pharmaceutically acceptable carrier.

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15. The vaccine composition of claim 14 wherein the *S. typhi* Vi polysaccharide is covalently bound to the *Pseudomonas aeruginosa* recombinant exoprotein A by means of an adipic acid dihydrazide linker.

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